

PATENTS
15311-2289
200301889-1

IN THE CLAIMS:

- 1 1. (Currently amended) A data receiving unit for receiving data transmissions in which
2 data is transmitted in parallel over a plurality of conductors and a forwarded clock signal,
3 synchronized with the data, is received over a further conductor, said unit comprising:
4 a first latch connected to receive the data on said data conductors, said latch being
5 clocked by said forwarded clock signal,
6 means for maintaining a delayed replica of said forwarded clock signal in synchro-
7 nism with said forwarded clock signal, said delayed replica being a local clock signal for
8 internal operations of said receiving unit,
9 a second latch connected to receive the contents of said first latch, said second
10 latch being clocked by said local clock signal on transitions alternate to those on which
11 said ~~first input~~ latch is clocked.
- 1 2. (Previously presented) A data receiving unit for receiving double-data-rate transmis-
2 sions in which data is transmitted in parallel over a plurality of conductors and a for-
3 ward clock signal, synchronized with the data, is received over a further conductor,
4 said unit comprising:
5 a. first and second input latches connected to receive the data on said data conduc-
6 tors, the first and second latches being clocked by alternate transitions of said forwarded
7 clock signal,
8 b. means for maintaining a delayed replica of said forwarded clock signal in syn-
9 chronism with said forwarded clock signal, said delayed replica being a local clock signal
10 for internal operations of said receiving unit,



PATENTS
15311-2289
200301889-1

11 c. third and fourth latches connected to receive the contents of said first and second
12 input latches, respectively, said third and fourth latches being clocked by transitions of said
13 local clock signal.

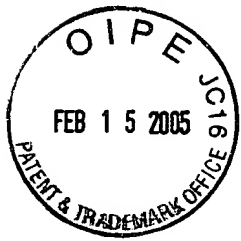
1 3. (Previously presented) The receiving unit defined in claim 2 in which said first and
2 third latches are clocked by corresponding clock edges and further including a delay ele-
3 ment disposed in the data path from said first latch to said third latch, thereby to prevent
4 jitter in the relative phase of the clock signals applied to said first and third latches from
5 causing errors in the transfer of data from said first latch to said third latch.

1 4. (Previously presented) The data receiving unit defined in claim 2 in which the syn-
2 chronism maintaining means synchronizes said delayed replica with the forwarded clock
3 signal as received at said first latch.

1 5. (Previously presented) The receiving unit defined in claim 2 in which said local clock
2 signal is delayed relative to the forwarded clock signal by an interval that is substantially
3 equal to the time required for the local clock signal to reach components in said receiving
4 unit clocked by that signal.

1 6. (Previously presented) The receiving unit of claim 1 wherein said local clock signal is
2 delayed relative to the forwarded clock signal by an interval corresponding to the time
3 required for the local clock signal to reach components clocked by the local clock signal
4 in said receiving unit.

1 7. (Previously presented) A method for receiving data transmissions at a data receiving
2 unit, the method comprising:



PATENTS
15311-2289
200301889-1

3 receiving data at a first latch disposed in the data receiving unit;
4 receiving a forwarded clock signal, synchronized with the received data, at the first
5 latch, the first latch being clocked on transitions of the forwarded clock signal;
6 maintaining synchronization between the forwarded clock signal and a delayed rep-
7 lica of the forwarded clock signal, the delayed replica being a local clock signal for internal
8 operations of the data receiving unit; and
9 forwarding the received data from the first latch to a second latch, the second latch
10 being clocked by the local clock signal on transitions that are alternate to those on which the
11 first latch is clocked.

1 8. (Previously presented) The method of claim 7 wherein the local clock signal is delayed
2 relative to the forwarded clock signal by an interval that is substantially equal to the time
3 required for the local clock signal to reach components clocked by the local clock signal
4 in the data receiving unit.

1 9. (Previously presented) A method for receiving double-data-rate data transmissions at a
2 data receiving unit, the method comprising:

3 receiving data at first and second latches in the data receiving unit;
4 receiving a forwarded clock signal, synchronized with the received data, at the first
5 and second latches, the first and second latches being clocked on transitions of the for-
6 warded clock signal;
7 maintaining synchronization between the forwarded clock signal and a delayed rep-
8 lica of the forwarded clock signal, the delayed replica being a local clock signal for internal
9 operations of the data receiving unit; and



PATENTS
15311-2289
200301889-1

10 forwarding the received data from the first and second latches to third and fourth
11 latches, respectively, the third and fourth latches being clocked by the local clock signal
12 on alternate transitions relative to the first and second latches.

1 10. (Previously presented) The method of claim 9 wherein the local clock signal is de-
2 layed relative to the forwarded clock signal by an interval corresponding to the time re-
3 quired for the local clock signal to reach components clocked by the local clock signal in
4 the data receiving unit.

1 11. (Previously presented) The method of claim 9 wherein said first and third latches are
2 clocked by corresponding clock edges, the method further comprising providing a delay
3 element in the data path from the first latch to the third latch, the delay element config-
4 ured to prevent jitter in the relative phase of the clock signals applied to the first and third
5 latches.

1 12. (Previously presented) The method of claim 9 further comprising synchronizing the
2 delayed replica of the forwarded clock signal with the forwarded clock signal received at
3 the first latch.